




16711/Pump Engines
D8(dp) Policy Ltr 02-2007 Ch 1
15 August 2007

MEMORANDUM


From: CAPT T. D. HOOPER
CCGD8 (dp)

To: Distribution

Subj: ELECTRONICALLY CONTROLLED CARGO PUMP ENGINES ON BOARD TANK BARGES

Ref: (a) 46 CFR 111.105-31(l)
(b) D8(m) Policy Ltr 02-2005 dtd 22Nov05
(c) E-mail from CDR Ramos, D8(dpi) to Sector Prevention Chiefs dtd 26May06
(d) D8(dp) Policy Ltr 02-2007 dtd 27Jul07

1. **PURPOSE:** This Policy Letter promulgates regulatory enforcement guidance for electronically controlled cargo pump engines installed on tank barges operating in the Eighth District.
2. **DIRECTIVES AFFECTED:** Enforcement guidance contained in references (b) thru (d) are cancelled.
3. **BACKGROUND:**
 - a. Reference (a) defines Class I / Division 1 locations as any area located within 10 feet (3 meters) of a cargo tank vent outlet or ullage opening, or cargo pipe flange or valve on a tank barge that carries a flammable or combustible cargo with a flashpoint below 60 degrees C (140 degrees F). Electrical equipment located in Class I / Division 1 areas must be intrinsically safe, explosion-proof, or must be purged and pressurized.
 - b. For many years, cargo pump prime movers on tank barges had mechanical-type start and control systems. Beginning about a decade ago, barge operators began upgrading these engines in order to meet EPA air quality requirements and improve efficiency. The change to electronic controlled engines had been made on an estimated 300 tank barges before it was recognized by the Coast Guard in 2005 that these engines were installed in a Class I / Division 1 area and did not meet the requirements of reference (a).
 - c. After consulting with LANT, HQ, engine manufacturers/suppliers, examining the risks and weighing the industry-wide disruption which would have resulted from requiring immediate and complete regulatory compliance, D8 mandated the installation of engine safety features complying with reference (a) (such as explosion proof battery box, alternator, etc) while allowing the barge's continued operation until August 30, 2006 (reference (b)). This deadline was extended for an additional year to August 01, 2007 (reference (c)) in

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recognition of the demanding process involved in qualifying electronic controls for placement in a Class I / Division 1 location. In June 2007, a Commandant letter (enclosure (1)) reaffirmed the appropriateness of Class I / Division 1 classification on tank barges and presented acceptable compliance options for industry consideration.

4. **DISCUSSION:** The following requirements outline the policy for tank barges operating in the Eighth Coast Guard District that have electronically controlled pump engines, regardless of manufacturer, located in Class I / Division 1 locations as defined in reference (a).

a. Effective on the date of this policy letter, barges that have been issued a CG 835 in accordance with reference (b) and any other tank barge operating in District Eight not in compliance with reference (a) can continue to operate until 1 August 2008. Operation is contingent on owner and/or operators meeting the following requirements: 1) Complete an inventory of tank barges that are not in full compliance with reference (a), to include a status of any electrical components that have been replaced with approved parts, and 2) Complete an inspection of tank barge engine installations to ensure that all electrical components still in need of replacement/not approved are in sound and serviceable condition. Results of this inventory, with details listed in enclosure (1), shall be provided to the local OCMI as soon as practicable. OCMI shall ensure all barges listed on the company's inventory list have a CG 835 issued and documented in MISLE.

b. Tank barges must be in full compliance with 46 CFR 111.105-5 and 46 CFR 111.105-31(l) no later than 1 August 2008 or be down-graded in cargo authorization such that the Class I / Division 1 location requirements no longer apply. This decision is based on our continued support of cargo pump engine manufacturers' ongoing efforts to meet the rigorous testing protocol required to certify engine control system components for placement in Class I / Division 1 locations. Since this certification is but one, among several, possible means of meeting Class I / Division 1 location requirements on tank barges, please understand that our facilitation of the manufactures' efforts will come to a close and blanket extensions will not be granted beyond the 1 August 2008 compliance date. Enclosure (2) should be made available to industry stakeholders to facilitate regulatory compliance.

c. Barges that are currently under construction will continue to be allowed to have an electronically controlled engine installed in Class I / Division 1 location. As these barges are certificated, they shall be issued a CG 835 addressing the requirement that the barge shall be in full compliance with 46 CFR 111.105-5 and 111.105-31(l) not later than 1 August 2008. The OCMI should advise barge owners, operators and shipyards of the 1 August 2008 deadline date to be in full compliance, and further ensure that stakeholders are aware of and have considered enclosure (2) when designing and building tank barges which may be impacted by this policy letter.

d. OCMI shall ensure their inspection/investigation personnel verify that tank barge pump engine installations are in compliance with this policy when conducting any inspection or boarding.

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5. **ACTION:** Eighth District OCMI's shall implement this guidance and disseminate the contents of this Policy Letter to tank barge owners/operators and other industry stakeholders operating in the Eighth District.
6. **FEEDBACK:** Questions on this policy should be referred to the Eighth Coast Guard District, D8(dpi), at 504-671-2105.

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Encl: (1) Sample List of Barge Details.
(2) G-3PSE Letter 16703/2005-161 dtd 22Jun07, "Review of the Classification of Hazardous Locations on Barges"

Dist: All Eighth District Sectors & MSUs

Copy: G-3PVC
G-3PSE
MSC
LANTAREA (AP)

Barge Name USCG Official Number CG00000 Engine Manufacturer John Deere/Cat/DDE/Cum Barge Class D/DO/O Current CG-835 for Electrical Engine YES/NO Who issued 835 (OCMI) list modifications to engine electrical/control sys components
I.E. panel enclosure, pyroban alternator assm, batt box assm,



16703/ 2005-161
22 Jun 07

MEMORANDUM

From: 
P.E. Little
COMDT (G-3PSE)

Reply to G-3PSE-3
Attn of: Dolores Mercier
202-372-1381

To: CGD EIGHT (dp)

Subj: REVIEW OF THE CLASSIFICATION OF HAZARDOUS LOCATIONS ON BARGES

Ref: (a) 46 CFR parts 111.105-5 and 111.105-31(l)
(b) IEC 60079-7, Edition 3.0, 2001
(c) Kirby Inland Marine, LP Double Skin Tank Barge Dwg EL3 for Hull No. 4489-4473
(d) Jeffboat Double Skin Tank Barge Dwg No. B 16992
(e) ABS Rules for Building and Classing Steel Vessels – 2007
(f) 46 CFR 32.60-10

1. This memo is in response to your request to review the applicability of current regulations regarding the classification of hazardous locations on barges per references (a) and (b). Sample barge arrangements provided in references (c) and (d) above were used in this review.
2. We have reviewed the regulations and have found that they provide the correct level of safety. Any deviations from current regulations would lessen the safety of a tank barge and be inconsistent with domestic and international standards.
3. The proposed cargo engines and their installation, references (c) and (d), do not meet current regulations. In order to be in compliance with current regulations one of the following five options must be executed.
 - a. Re-design the barge so that the cargo engine is located in a non-hazardous location.
 - b. Design and build an enclosed compartment that is at least 18 inches above the cargo tank top to house the engines, so that the cargo pump engine installations are not directly above a cargo tank. This enclosed compartment will not carry a hazardous location classification, provided any opening to this compartment is located outside of the hazardous locations on the barge. Additionally, the cargo pump(s) and associated piping are not allowed in the engine compartment. The space between the floor of the enclosed compartment and the cargo tank top will act as a cofferdam, or may be used for Grade E cargo or engine fuel storage as long as that fuel has an open cup flashpoint of not less than 150 degrees F per the segregation of cargo regulations in reference (f). This space should be accessible for internal examination. Access may be by standard bolted and gasketed manhole fittings as appropriate.

Encl: (2)

Subj: REVIEW OF THE CLASSIFICATION OF HAZARDOUS
LOCATIONS ON BARGES

16703/2005-161
22 Jun 07

- c. Design and/or modify the current engines with electrical components and sensors that are approved or listed as explosion proof (IEC Ex d, flameproof), and/or engine sensors that meet the intrinsically safe (IEC Ex Ia) or increased safety (IEC Ex e) protection techniques for Class I, Division 1 (IEC IIC, IIA or IIC, Zones 0 or 1) hazardous or classified areas.
 - d. Locate a safe area for the engine and use hydraulically driven cargo pumps.
 - e. Use the aft rake to house the engine(s) with the following considerations:
 - (1) A cofferdam is required between the cargo tank and the rake.
 - (2) The opening or access to the rake engine area should be outside the hazardous boundaries.
 - (3) The cargo pump and associated piping are not allowed in the rake engine area.
4. For any additional questions please contact Ms. Dolores Mercier at 202-372-1381 or via email at Dolores.Mercier@uscg.mil.

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Copy: CG LANTAREA (Ap)
CG PACAREA (Pp)